PRELIMINARY DESIGN PLAN CHECKLIST - BRIDGE

Date: 7~~4~~-2~~25~~-2013

County:_____ **Design No.:**_____ **Check By:**_____ **Date:**_____

Project Location:_____ **Consultant:**_____

GENERAL

Title Block

___ "Design For (xx Skew) (RA)(LA)"

___ Structure Type and Size and Beam Type (Ex.: "304'-0 x 40'-0 Prestressed Pretentioned Concrete Beam Bridge")

___ For bridges with multi-project staging, the structure width listed should be the width of the current stage plus all previously completed stages. (Ex.: if stage 1 construction is 20 ft. and stage 2 construction is 30 ft., the first project title block should show 20 ft. and the second project title block should show 50 ft.) Show text: Stage 1, Stage 2 as-needed

___ Span Description (Ex "101'-0 End Spans", "102'-0 Center Span")

___ Station of bridge at center of bridge (offset needed for duals)

___ Current TSL Date (Ex.: "December 2010")

___ County

___ "Iowa Department of Transportation - Highway Division"

___ "Design Sht. No. x of x", "File No.", "Design No."

___ Situation Plan

Location

___ Location: Road over road/stream

___ Federal Railroad Administration Identification No. (FRA) and Iowa crossing number

___ Township/Range (Ex.: "R-2W", "T-87N")

___ Section (Ex.: "36")

___ Latitude/Longitude at station of bridge at center of bridge (Ex. : "12.345678/-12.345678")

___ County

___ Bridge Maintenance Number

Traffic Estimate

___ Traffic data shown

Vertical Profile Data

___ Vertical curve data

Horizontal Profile Data

___ Horizontal curve data

Vertical Clearance Table

___ Include station/offsets/elevation (mainline/sideroad), deck thickness, haunch, beam depth, vertical clearance. Submit data if on super elevation

Utilities List Block

___ Utilities - add legend table and label each for all utilities shown on plan sheet

Recoverable Berm Location Table

___ Recoverable berm location table - show if necessary

Berm Slope Location Table

___ Berm slope location table

Hydrology & Hydraulic Data

___ Hydraulic data table – see data cell for appropriate application

Berm Slope Armoring

___ Provide typical section showing embedded vs. non-embedded and table showing quantities for revetment, erosion stone, engineering fabric and class 10 excavation. Show and lable 'grading surface'

Ground Control Grading

___ Provide coordinates if applicable

Signature Block

___ Consultant PE signature for Hydrology & Hydraulics – bridge over water/new RCB (does not include extensions)

Staging

___ Staging sequence details if required

Railroad Bridges

___ For all RR bridges, show macadam stone protection

___ Minimum horizontal clearance dimension to pier

___ Crashwall for RR overpass (provide if center track to face column is less than 50')

___ Remember special 3'-8 rail for UP/BNSF RR bridges

___ UP/BNSF RR bridge, assume 10:1 trasition for barrier rail, as taller rail is required

___ UP/BNSF RR bridges, do not add fence on bridge barrier rail unless required by UP/BNSF RR

___ For UP/BNSF RR include bridge standard sheet 1067

___ Railroad bridges - show fence if required

___ Railroad bridges - add note stating fence type (curved - sidewalk/trail or straight – shoulder only)

Notes (as-needed)

___ "Non-Standard Abutment Wing Wall"

___ "Standard Bridge (Index No.)"

___ "TL - # Bridge Railing Proposed" (use for all bridges)

___ "2-Span Grading Shown" (see EW 203/204 - 5' offset)

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___ "Top of bridge deck at centerline roadway is 'x' above (or below) the profile grade to account for deck cross slope and parabolic crown"

___ "Top of bridge deck crown 'X' below profile grade"

___ "Pier Type – (Frame, T, Pile Bent, Diaphram, etc)" Note if designed for collision force [BDM 6.6.2.6]

___ "Beam Type – (BTB, etc.) (AASHTO A, B, etc.) (WPG – include depth)

___ "Provide vent hole in beam"

___ "Class (B, E, etc) revetment stone is (embedded or non-embedded)". [BDM C3.2.7.3.3]

___ "Note to Final Design: As this project requires a sovereign lands permit, bid item reference notes shall restrict broken concrete as a substitute for revetment." [BDM 3.2.7.5]

Bridge Cross Section

___ Show bridge cross section – fully dimension, show lanes/shoulders/cross slopes/beams etc. (consultants only)

Miscellaneous

___ North arrow

___ Scale bar

___ Benchmark description

___ Border: "County", "Project No.", Sht. No. x of x"

___ Use current Micro Station CADD level/color schemes as shown on IaDOT's web site.

PLAN VIEW

___ 'Face to Face of Paving Notches' dimension shown

___ Proposed span lengths and total bridge length (centerline to centerline pier/abutment)

___ Proposed stations along centerline approach roadway at piers/abutments

___ Roadway designation(s)

___ Typical Approach Roadway Section - dimension lane/shoulder widths and show cross slopes

___ Berm slope armoring - Label type (revetment vs erosion stone) and show offset limits from centerline approach roadway [BDM 3.2.7.3.5]

___ POT stationing of mainline roadway construction centerline and side-road intersection

___ Skew angle – show actual in plan view and design skew in Title Block to nearest degree

___ Minimum vertical clearance location

___ Minimum horizontal clearance dimension to pier

___ Label guardrail – "Guardrail"

___ Arrows for direction of traffic

___ Dimension variable width bridges at abutments

___ Bridge abutment wing wall dimension shown if non-standard length used

___ Structures with no side piers – dimension offset

___ Ground elevations preferred for bridges, label contours if used

~~___ Existing utilities, fence-lines, tiles (label fiber optic, gas line, etc.)~~

~~___ Existing structures (bridge, culverts), label - include description and design number~~

~~___ Proposed culverts near bridge – label type/size/location info~~

___ Existing utilities (fence-lines, tiles); label - fiber optic/gas line/etc

___ Existing structures (bridge, culverts); label - type/size/station and design number

___ Other proposed structures (bridge, culverts) shown on TSL sheets; label - type/size/station and design number

- If structure not part of project (paren) or a tied project, also add 'Not Part Of This Contract' (Use this option for dual bridges, staged bridges unless let together or tied)
- If structure part of project (paren) or a tied project with different design number, also add 'See Design ????'

___ Dimension sideroad lane and shoulder widths

___ Proposed roadway embankment shaping

___ Proposed berm and channel shaping

___ Label all centerlines and profile grade lines

___ Label stationing on at least two "tic" marks in the plan view

~~___ Future work – label bike trail, ramps, etc (by others)~~

___ Stream name and direction of flow

___ Check text/dimensioning legible and not placed on top of other details

LONGITUDINAL SECTION

___ Bottom of footing elevation

___ Slope protection: label type, thickness

___ Existing ground line and proposed grade line shown/labeled

___ Existing structure – substructure, piling (from as-built plans)

___ Berm slope labeled (2.5:1 max, Normal)

___ Vertical clearance – actual location and dimensoin

___ Top of berm elevation at abutments

___ Stream bed elevation

___ Q 'Design' water surface elevation without backwater

___ Scour elevations – ~~'Design'~~ Typically use Q200 ~~scour elevations~~

___ Abutment/pier deck elevations along the centerline of approach roadway